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UNIVERSITY OF ALBERTA
AUTOMATION AND THE CHANGING ROLE OF THE STENOGRAPHER

by



Joyce Louise Piepgrass

A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Automation and the Changing Role of the Stenographer", submitted by Joyce Louise Piepgrass in partial fulfilment of the requirements of the degree of Master of Education.

ABSTRACT

The purpose of this study was to investigate whether automation is changing the role of the stenographer. The specific focus of the research was to obtain answers to the following questions:

1. What is the extent of use of shorthand in selected industries?
2. What proportion of the stenographer's day is spent taking shorthand and transcribing notes?
3. What is the level of skill of shorthand when it is used?
4. What proportion of the stenographer's day is spent transcribing machine dictation?

The Alberta Bureau of Statistics 1967 Interim Salary and Wage Rate Survey was the source of the Edmonton Industrial Population to be surveyed. The subjects involved consisted of an employer and an employee from each Edmonton Industry listed.

The instrument used to obtain data for analysis was developed specifically for this study and consisted of an employer and an employee opinionnaire. The responses obtained from answers to the questions asked on the opinionnaires, were recorded, tabulated, and analyzed.

The investigation revealed that over 60 per cent of the stenographers interviewed were required, for their present employment, to have shorthand skill. Almost 70 per cent used shorthand in their present employment and the proportion of their day spent in taking and transcribing shorthand was approximately one-quarter of the day. The level of skill required for shorthand when it was used was approximately 80 to 100 words per minute. Almost one-half of the stenographers in this area were required to transcribe from dictation machines. The proportion of the stenographer's day spent transcribing machine dictation was up to one-quarter of the day. About one-half of the employer respondents preferred face-to-face dictation given to a stenographer. Over half of the employee respondents interviewed expressed the opinion that machine dictation was decreasing the need for shorthand, although they indicated that in their opinion, while the need for shorthand was decreasing, it was not being eliminated. No attempt was made in this study to generalize beyond the Edmonton area.

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CHAPTER I

INTRODUCTION

Karl E. Scott, President of Ford Motor Company of Canada, states that "The gap between discovery of new technological ideas and their application to industry has been reduced."¹ Robert A. Brady recommends that a "rethinking through"² be undertaken concerning automation and the office. He quotes John S. Coleman, President of Burroughs Corporation, as saying that banking is already moving in the direction toward the automatic or 'push button' office in which one feeds raw business data into one end and receives from the other end of the system, without human intervention, all finished documents and statements that are required for the efficient operation of the industry.³

¹Ziel, H. R. (ed.), Education and Productive Society, W. J. Gage Limited, Canada, 1965, p. 55.

²Robert A. Brady, Organization, Automation and Society, University of California Press, Berkeley, California, 1963, p. 13.

³"Electronics and Banking", Mimeographed, cited by Robert A. Brady, Organization, Automation, and Society, (Chicago: John S. Coleman, June 18, 1954), footnote 17, Chapter I.

THE PROBLEM

The General Statement

According to the Alberta Bureau of Statistics Wage and Salary Rate Survey, job descriptions for stenographers have changed, in so far as responsibilities are concerned, over a period of 9 years, or from 1957 to 1966. In 1957 this bureau defined a stenographer as one who:

Takes dictation, transcribes, lays out and types a variety of correspondence and reports, etc., for one or more individuals....⁴

In 1966 this bureau redefined a stenographer as one who:

Performs secretarial duties for one or more supervisors. Takes dictation by shorthand and [or] transcribing machine.⁵

Specific Problems

The focus of this study was on one characteristic of the role of the stenographer. The study was attempted to determine whether this characteristic was

⁴Alberta Bureau of Statistics, Wage and Salary Rate Survey, Department of Industries and Labour, Edmonton, Alberta, June 24, 1957, p. 8.

⁵Alberta Bureau of Statistics, Wage and Salary Rate Survey, Department of Industries and Labour, Edmonton, Alberta, July 1966, p. 8.

changing due to the increasing utilization of automated office equipment. In question was the extent to which and the direction which automation will have an effect upon and influence stenographic personnel. Was the role of the stenographer changing, and if so how was the change influencing communication given to the stenographer? Was automated office equipment changing the tasks of the stenographer? Specifically the research attempted to obtain answers to the following questions:

1. What is the extent of use of shorthand in selected industries?
2. What proportion of the stenographer's day is spent in taking shorthand and transcribing notes?
3. What is the level of skill of shorthand when it is used?
4. What proportion of the stenographer's day is spent transcribing machine dictation?

Basic Assumptions

There is a demand today for stenographers employing the skill of shorthand. However, because of automated office equipment, many jobs formerly considered manual operations, and performed by a stenographer, are now being performed by machines. However, it is assumed that the stenographer's skill in shorthand will also be an influence on the use made of this skill.

Need for the Study

Continuous examination of curricula taught in public schools is an essential procedure in education. Shorthand, in various forms, has been taught for many years, and is presently

being taught in secondary schools in the Province and particularly in the Edmonton area. The use made of shorthand skills, on the job, have important implications for educating stenographers in the secondary school.

It was proposed that this study be undertaken to determine the use made of shorthand in selected industries in the Edmonton area, as an indication of what the trend of the demand for secretaries qualified in shorthand would be in the foreseeable future.

Definition of Terms

Business Education refers to that part of education dealing with business experiences, both for occupational and general use.⁶

Dictation Machine is defined operationally as any machine which records by means of a tape, record, or belt, the voice of the dictator for the purpose of transcription.

Employer is defined operationally as one who employs or supervises stenographers.

Shorthand is used collectively to signify any method of writing rapidly, symbols for words, or letters, whether the system be called Pitman, Gregg, Forkner, Speedwriting, or any other name.

Stenographer refers to one whose main duty is to take dictation by some means and transcribe it into acceptable written or typed form.

⁶Theodore Woodward (ed.), Recent and Projected Developments Affecting Business Education, National Business Education Association, Washington, D. C., 1964, p. 1.

Sources of Data and Procedure

The 1967 Interim Salary and Wage Rate Survey⁷

was used for the industrial population of Edmonton to be surveyed; from this source one hundred sixty-seven industries in Edmonton, representative of those industries who have participated in the Alberta Bureau of Statistics Salary and Wage Rate Survey, for 1967, were used for the purpose of obtaining answers to the following questions:

1. What is the extent of use of shorthand in selected industries?
2. What proportion of the stenographer's day is spent taking shorthand and transcribing notes?
3. What is the level of skill of shorthand when it is used?
4. What proportion of the stenographer's day is spent transcribing machine dictation?

The 1967 Interim Salary and Wage Rate Survey, for operational purposes⁸, was defined as being an adequately selective sampling, for the intent of this study. This operational definition was used on the principle of parsimony.⁹

⁷Alberta Bureau of Statistics. See Appendix A.

⁸Anatol Rapoport, Operational Philosophy, Harper & Brothers Publishers, New York, 1958, p. 76.

⁹Ibid.

A listing of these one hundreded sixty-seven Edmonton industries, as taken from the 1967 Interim Salary and Wage Rate Survey is included in Appendix A. The business manager, or the owner, in the case of a smaller industry, was telephoned, and answers were elicited to the questions asked on the Employer's Opinionnaire, a copy of which is included in Appendix B. The employer was then asked whether the researcher might interview a stenographer employed by the same industry as representative of their stenographic staff, for the purpose of obtaining information relative to the research being undertaken. The stenographer was then requested to answer the questions appearing on the Employee's Opinionnaire, a copy of which is included in Appendix B.

CHAPTER II

REVIEW OF RELATED LITERATURE

Concerning the displacement of workers from their jobs Grant Venn has said:

The impact of these devices [automated machines and computers] on the labor market has been profound. Automatic elevators have recently displaced 40,000 elevator operators in New York City alone. New equipment in the Census Bureau enabled 50 statisticians to do the work in 1960 that required 4,000 such people in 1950. The check-writing staff in the Treasury Department has been reduced from four hundred people to four.¹

Of the employment problem created by the increase in automation, W. H. Ferry has found that:

The unemployed and under-employed are no longer almost exclusively the unskilled, the recent immigrants, the colored, the groups at the end of the economic scale, who have customarily borne the heaviest weight of economic slides. White-collar workers are joining this group as automation reaches the office. There is some reason for thinking that white-collar workers will after a few years compromise most of the growing category of technologically displaced.²

Among the more serious implications arising from automation is the inability to predict with any degree of certainty just how certain segments of the labour force will be affected by new technologies. Occupational patterns are changing very rapidly, leaving little time for adjustment; these alterations

¹Herman J. Peters, and James C. Hansen, Vocational Guidance and Career Development, The Macmillan Company, New York, 1966, p.7.

²Ibid.

of manpower requirements include persons displaced because of technological change, those who may be displaced, and those who must make adjustment for technological change, as well as for those not yet in the labour force but who are preparing for a vocation and who will in the future be looking for jobs.

This problem is a complex one. It is a social, economic, political, and also an educational problem, since trends indicate that automation alters manpower requirements in favor of occupations requiring more education and training.³ Not the least of these problems is the fact that there is so little consensus of opinion on the effect that automation will have on office personnel.

In 1961 there were one million female white-collar workers in Canada. White-collar workers accounted for 57 per cent of the total female labour force. This distribution of the labour force by occupational group breaks down into stenographers, typists, and clerk typists accounting for 209,410 persons in Canada in 1961, an increase of 56.9 per cent over 1951 and 222.2 per cent increase from 1931.⁴ These figures indicate that white-collar workers, and especially

³Goodwin Watson, editor. No Room at the Bottom: Automation and the Reluctant Learner, Washington, D. C.: National Education Society. 1963.

⁴Department of Labour, Occupational Trends in Canada, 1931 to 1961, Queen's Printer (Ottawa), 1965. PP. 5 - 38.

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stenographers, typists, and clerk typists will probably continue to increase in number. However, even this evidence may be subject to variables which will influence the inability to predict trends with any certainty.

Writing on this issue, Albert R. Karr, Staff Reporter of The Wall Street Journal, has said: "Cutbacks [in white-collar workers] reflect top management's growing conviction that white-collar payrolls have ballooned beyond reason."⁵ White-collar workers may look busy when they are actually accomplishing very little. Karr cites the case of a Chicago company suddenly realizing that one particular clerk had for years devoted his entire time to a daily report which no one read. The report was dropped and the clerk's activities were switched to a more productive type of work.⁶ It is reported that

One of the most rigorous belt-tightening operations by a major corporation was undertaken by Chrysler Corp. in 1962. It fired 7,000 of 36,000 white collar employees, from secretaries to high-ranking executives. The action helped lower Chrysler's break-even point to 725,000 cars and trucks from a million units. President Lynn A. Townsend says the cutback didn't impair efficiency.⁷

One authority, Ida R. Hoos, estimates that for every new job created by automation five old ones will be eliminated.⁸

⁵Albert R. Karr, "White Collar Cutback", Journal of Business Education, XXXVIII, No. 8, May 1963, p. 331.

⁶ Ibid.

⁷ Ibid., p. 332.

⁸Ida R. Hoos, "When the Computer Takes Over the Office", Harvard Business Review, XXXVIII, No. 7, July-August 1960.

However, the annual Manpower Report of the President indicates that a shortage of stenographers and other well-trained office workers will persist for some time.⁹ It is Karr's¹⁰ conclusion that while there will be cutbacks in white-collar workers, secretaries, and other administrative and technical personnel will continue to make up a larger portion of white-collar workers than they did a few years ago. In question is the extent to which and the direction which automation will have an effect upon and influence stenographic workers.

Technological Changes

As far back as 1939 Tonne¹¹ said that the dictation machine was one of the most promising means of developing new avenues of communication. Machine shorthand was subject to the same complaints then that one hears about it today--prohibitive cost of the machine to the employee, and the reluctance of the employer to invest in the machine, since the cost does not warrant expenditure when the high turnover of young female office personnel is considered.

Automated equipment that is further changing the tasks formerly performed by the stenographer with some degree of drudgery include Thermal duplication, which can produce multiple copies from a single typed copy, thus freeing office workers

⁹Manpower Report of the President, March 1963, p.20, cited by Woodward, op. cit., p. 46.

¹⁰Karr, op. cit., p. 331.

¹¹Herbert A. Tonne, Business Education Principles and Trends, The Gregg Publishing Company, New York, 1939, p. 192.

from reproducing material by means of a wet stencil.

International Business Machines has in the developmental stages, a transcribing machine that spells phonetically, and that will transcribe the dictation that has been taken down on a shorthand machine.¹²

A typewriter is now available which allows the typist or stenographer to type while the copy is being recorded on tape; errors are corrected by pushing a button for the tape to reverse to the point where the error was made, and the error is deleted by typing over it, and erasing the tape. When the copy is finished the typist with a flick of a button produces a perfect copy in minutes.

Whether the cost of automated equipment will be an important factor affecting its wide adoption in offices is entirely possible and may preclude some types of equipment being used.¹³ However, automated equipment is available, is in use, and in some instances is changing the role of the stenographer.

Seventy-two billion pieces of mail were produced in the United States in 1965, seventy per cent of which was business mail;¹⁴ the cost of writing a business letter, as estimated by Plowman in 1965 was \$2.25.¹⁵ These figures indicate

¹²Lois C. Plowman, "The Impact of Automation Upon the Job Opportunities for Office Clerks, Typists, and Stenographers", Journal of Business Education, XXXIII:1, October 1967, p. 29.

¹³Ibid.

¹⁴Ibid.

¹⁵Ibid.

that there is no question as to the need to reduce the cost of office communication expenditure. Automated equipment will undoubtedly reduce this cost.

This is not linear change such as the change that electric typewriters produced over manual ones, but is within the realm of exponential change in the role of the stenographer with the assistance of automated equipment. Of the impact of automation upon the stenographer's role, Herbert A. Tonne of the State University of New York at Albany stated:

...there is evidence that there is considerable shift in the way in which communication is given to the stenographer. People are making increased use of the telephone rather than writing letters despite the lack of evidence that a message was given. It is cheaper, faster, and requires less expenditure of nervous energy on the part of the communicator. There is some evidence that middle management office workers write out in longhand or type in rough draft communication that cannot be made by telephone. An ever increasing number of firms are insisting on the use of dictating machines as a means of speeding up communication. Yet the demand for face-to-face shorthand dictation persists and increases. The statement made by one famous advocate and author of shorthand that all other procedures are used because there is such a shortage of moderately good stenographers has more than a germ of truth.¹⁶

Entrance Requirements

According to one researcher, Dublanko, typing skill

¹⁶Herbert A. Tonne, "Is Shorthand Changing?", The Journal of Business Education, XXXXIII:2, November 1967, p. 52.

appears to be the most necessary skill that the stenographer can possess.¹⁷ Tonne disagrees with this position and believes the most desirable skill for job entry is that of shorthand.¹⁸ With automated equipment one may well ask if shorthand is still the most desirable skill that a stenographer may have, and contingent upon the use made of automated equipment, will the demand for shorthand remain.

Gibson in 1959¹⁹ took a dim view of the future of shorthand:

Vocationally, shorthand is a dead duck. No office today can afford the cost of dictating a letter to an expensive worker, when the same or better results can be obtained by dictating to a low-cost machine.

However, with the more routine aspects of secretarial work being taken over by machines, a greater emphasis will be placed upon the candidate's ability to handle work requiring initiative, judgement, specialized training, and facility in dealing with the public. The stenographer should have a better understanding of modern office equipment that automation is generating.²⁰ The

¹⁷Tofen Dublanko, "A Follow-Up Study of the Victoria Composite High School, Edmonton, Alberta, Business Education Graduates for the Year 1956, 1957 and 1958." Unpublished Master's thesis, The University of North Dakota, Grand Forks, 1960, p. 77.

¹⁸Tonne, 1967, op. cit. p. 53.

¹⁹E. Dana Gibson, "Office Automation Means Revolution in Business Education", Business Education World, XXXIX, March 1959, p. 24.

²⁰Dublanko, op. cit., p. 79

stenographer needs more and better training in the basic skills according to Dawson,²¹ Benedict,²² Dublanko,²³ and Woodward.²⁴ This same better training and competency is also stressed by Tonne.²⁵ The pace of change places an increasing premium on broad, basic skills, having a long time utility rather than transient skills, contends Woodward.²⁶ However, each of these authorities would agree that there is continuing demand for educated skilled individuals as opposed to those who are undereducated and/or unskilled.

MacDonald's 1959 survey²⁷ of 76 offices in the Edmonton area showed that for purposes of transcription, 29 per cent of

²¹Leo Shirley Dawson, "A Follow-Up Study of High School Shorthand Students", Unpublished Master's thesis, The University of Alberta, Edmonton, Alberta, 1966, p. 75.

²²Margaret I. Benedict, "Criteria for Predicting Shorthand Success", Unpublished Master's thesis, The University of Alberta, Edmonton, Alberta, 1964, p. 44.

²³Dublanko, op. cit., p. 79.

²⁴Woodward, op. cit., p. 192.

²⁵Herbert A. Tonne, "Better Clerical Training Needed for Automation", Business Education Forum, XVII:5, February 1963.

²⁶Woodward, op. cit., p. 42.

²⁷Malcolm E. MacDonald, "A Survey of the Types of Office Machines in Edmonton, Alberta Community for the Purpose of Designing Appropriate Office Machines Instruction." Unpublished Master's thesis, University of North Dakota, Grand Forks, North Dakota, 1959, p. 138.

offices surveyed used shorthand exclusively, 15.7 per cent used dictation machines exclusively, and 55.3 per cent used a combination of shorthand and dictation machines.

Dawson's²⁸ 1966 follow-up study of high school students indicated that 70.4 per cent of the respondents used shorthand on the job for one-quarter or less of the working day, 29.7 per cent used shorthand on the job for one-half or more of the working day, and 46.9 per cent of respondents who had two years of shorthand in school reported the use of shorthand on the job one-half or more of the day.

²⁸Dawson, op. cit., p. 72.

CHAPTER III

TREATMENT OF DATA AND METHOD

Treatment of Data

For the purpose of obtaining answers to the specific following questions, data was obtained in answer to the questions asked on the Employer and Employee Opinionnaires, copies of which are included in Appendix B. The interviews with the employer and employee were structured interviews carried out by telephone, in the interest of time, economy and convenience for those being interviewed. The industrial population consisted of Edmonton industries listed on the 1967 Interim Salary and Wage Rate Survey. From this source one hundred sixty-seven industries in Edmonton, representative of those industries who have participated in the 1967 Alberta Bureau of Statistics Salary and Wage Rate Survey, were used for the purpose of obtaining answers to the following questions:

1. What is the extent of use of shorthand in selected industries?
2. What proportion of the stenographer's day is spent in taking and transcribing shorthand notes?
3. What is the level of skill of shorthand when it is used?
4. What proportion of the stenographer's day is spent transcribing machine dictation?

It was proposed that from the information gained through the answers to the questions on the Employee and Employer Opinion-

naires, and recorded on optical scoring sheets that conclusions could be drawn concerning the foregoing questions.

Method

The nature of the information required for the analysis of the use made of shorthand in industry in the Edmonton area is described, as is the instrument which was used, together with some evidence that it was satisfactory for this purpose. Finally, a description of the manner in which the information was gathered, organized, and how the data was treated in order to evaluate the use of shorthand, is included.

Kinds of Information Required

The information used was obtained from Employers and Employees by means of a structured telephone interview, recorded in coded form on optical scoring sheets. The population surveyed was selected by the Alberta Bureau of Statistics, as representative of those industries who have participated in their Survey for the purpose of establishing a Salary and Wage Rate Schedule for the Province of Alberta, and whose names appear in the 1967 Interim Salary and Wage Rate Survey, a copy of which is included in Appendix A. For the purpose of this research, only the industries in the Edmonton area appearing on this document, were used.

The Business Manager, or Personnel Manager, of each office or establishment was interviewed, except in the case of smaller offices where the owner or general manager was interviewed.

Each of these employers, as they are subsequently referred to, were then asked to suggest a stenographer from their staff to be interviewed, as representative of their stenographic employees.

One hundred sixty-seven Edmonton industries appeared on the 1967 Interim Salary and Wage Rate Survey. However, one hundred fifty-nine employers and one hundred fifty-two employees made up the respondents for the purpose of this research, with the remaining number not wishing to take part or having been unavailable.

The telephone interviews were designed to take approximately twenty minutes, although occasionally some respondents had more comments to make than another. The respondents were cooperative, and with the exception of three industries¹ did not indicate unwillingness to participate in telephone interviews. The interviews began the first week in May, 1968 and were concluded the first week in August, 1968.

Description of the Instrument

Since the study needed to encompass several kinds of industries, to be representative of the Edmonton area, and since the overall number of persons to be interviewed was comparatively small, it therefore made it mandatory that a good response be obtained from the maximum number possible; the structured telephone interview was considered the most likely to elicit the required information. An opinionnaire for both the employer and employee was developed, copies of which are included in Appendix B.

¹Swift Canadian Co. Ltd.; The T. Eaton Co. of Canada Ltd., and Waterloo Motors Ltd. indicated that they did not wish to participate in this particular kind of study.

Reliability and Validity of the Instrument

The opinionnaires were submitted to three professors of the Department of Vocational Education and Industrial Arts, Faculty of Education, University of Alberta, for suggestions and criticism.² Some revisions were instituted and the opinionnaires were then tested by carrying out interviews with three employers and three employees. These people provided an opportunity to test the sequential format of the opinionnaires and experience as to how to objectively elicit answers to the questions to be asked; the data obtained from this source is not included in the research. The trial respondents agreed that the interviews if carried out as scheduled should provide the information required to answer the following questions:

1. What is the extent of use of shorthand in selected industries?
2. What proportion of the stenographer's day is spent in taking shorthand and transcribing notes?
3. What is the level of skill of shorthand when it is used?
4. What proportion of the stenographer's day is spent transcribing machine dictation?

The precautions outlined and the comparison between data obtained from these trial respondents and the first few respondents from the research population seemed to indicate that the instrument used to gather the necessary information was both valid and reliable. Therefore, for the purposes of this study, the instrument has been considered "operationally" valid and reliable.³

²See Appendix B, page 68.

³Rapoport, op. cit.

CHAPTER IV
INTERPRETATION OF DATA

This chapter is primarily concerned with interpreting the responses to opinionnaires included in the Appendix B as exhibit 1 and 2. To do this adequately, this section was divided into two main sections as follows: Employer Responses and Employee Responses, for the purpose of isolating the data obtained from both Employers and Employees.

Employer Responses

Table I shows the number of employers having machine dictation equipment. Of 159 respondents interviewed, 101 employer respondents had machine dictation in their establishment; 58 employers did not have machine dictation equipment. Thus, 63.5 per cent of the employer population interviewed had machine dictation equipment, while 36.5 per cent did not.

TABLE I
EMPLOYERS HAVING DICTATION EQUIPMENT

	Number	Per cent
Affirmative	101	63.5
Negative	58	36.5
Total	159	100

Table II illustrates the number of employers using machine dictation, at the time of the interviews. Forty-nine employers (31 per cent) used machine dictation; 110 employers (69 per cent) did not. Of the 49 employers that used machine dictation, 7 (4.4 per cent) wished to qualify their use as only occasional. From Table I, page 20, it is noted that 101 respondents had machine dictation equipment, and that of that 101, 49 (48.5 per cent) of those employers having machine dictation actually used it.

TABLE II

EMPLOYERS THAT USED MACHINE DICTATION

	Number	Per cent
Affirmative	49	31
Negative	110	69
Total	159	100

Table III, page 22, illustrates the number of employers that dictated to a stenographer. It is indicated by this table that 101 (63.5 per cent) dictated to a stenographer but of this 101, 18 wished it to be noted that they only dictated to a stenographer occasionally; then 11.3 per cent of the total that dictated to a stenographer did so only occasionally. Fifty eight (36.5 per cent) of the employer population did not dictate to a stenographer.

TABLE III

EMPLOYERS THAT DICTATED TO A STENOGRAPHER

	Number	Per cent
Affirmative	101	63.5
Negative	58	36.5
Total	159	100

Table IV lists the number of employer respondents that preferred face-to-face dictation given to a stenographer. From this table it is noted that 76 (47.8 per cent) of the employer population interviewed, preferred face-to-face dictation; 46 (28.9 per cent) preferred machine dictation. Twenty-two employers (13.8 per cent) had no preference, and 4 (2.5 per cent) of the employer population stated that each type of dictation had its own place, with each type being convenient for a particular type of work.

TABLE IV

PREFERENCE OF EMPLOYERS AS TO MACHINE DICTATION
OR FACE-TO-FACE DICTATION

	Number	Per cent
Face-to-face dictation preferred	76	47.8
Machine dictation preferred	46	28.9
No Preference	22	13.8
Preference depends upon duties involved	4	2.5
Not listed	11	6.9
Total	159	100

Table V shows the distribution of employers that type out or write in long-hand some form of communication for a stenographer to reproduce by typewriting or other means. Ten respondents (6.3 per cent) type out communication for a stenographer to reproduce, while 115 (72.3 per cent) wrote out in long-hand, communication to be reproduced by a stenographer.

TABLE V

EMPLOYERS THAT TYPED OR WROTE OUT COMMUNICATION
GIVEN TO A STENOGRAPHER

	Number	Per cent
Wrote out in long-hand	115	72.3
Typed	10	6.3
Not listed	34	21.4
Total	159	100

Table VI, page 24, shows the employers who preferred a stenographer having shorthand skill, rather than having an employee capable in machine dictation only, if all else were equal. One hundred ten employer respondents (69 per cent) indicated that they would choose a stenographer with shorthand skill. The number of respondents who did not prefer shorthand skill was 21 (13.2 per cent). Machine dictation skill was preferred by 9 respondents (5.7 per cent), while 11 employers (6.9 per cent) had no preference. Eight employers interviewed

(5 per cent) expressed the opinion that it would depend upon the duties involved whether they would prefer machine dictation skill alone or shorthand skill.

TABLE VI

EMPLOYERS THAT PREFERRED STENOGRAPHERS TO HAVE
SHORTHAND SKILL, RATHER THAN CAPABILITY IN
MACHINE DICTATION, IF ALL ELSE WERE EQUAL

	Number	Per cent
Preferred shorthand	110	69.2
Did not prefer shorthand	21	13.2
Preferred machine dictation	9	5.7
No Preference	11	6.9
Preference depended upon duties involved	8	5
Total	159	100

Employee Responses

Table VII, page 25, shows the distribution of employee respondents interviewed who used shorthand. There were a total of 152 employee respondents; of this total, 103 used shorthand (67.8 per cent); 46 employees (30.2 per cent) did not use shorthand. Of the 103 respondents that did use shorthand, 7 (4.6 per cent) wished to specify that they only used shorthand occasionally. Three respondents (2 per cent) of the employee population interviewed were not listed.

TABLE VII

EMPLOYEES WHO USED SHORTHAND

	Number	Per cent
Respondents that used shorthand	103	67.8
Respondents that did not use shorthand	46	30.2
Not listed	3	2
Total	152	100

Examination of Table VIII reveals that 87 employee respondents (57.8 per cent) used Pitman shorthand; 38 (25 per cent) used Gregg; 13 (8.6 per cent) used Speedwriting, and 2 employees interviewed (1.3 per cent) used other kinds of shorthand.

TABLE VIII

TYPES OF SHORTHAND EMPLOYEES USED

	Number	Per cent
Pitman	87	57.2
Gregg	38	25
Speedwriting	13	8.6
Other	2	1.3
Not listed	12	7.9
Total	152	100

Table IX, on the page following, indicates the extent to which shorthand was used by the employees interviewed,

specifically the portion of the day spent in taking and transcribing shorthand. It is shown that 4 (2.5 per cent) of the employee population spent all day taking and transcribing shorthand notes; 7 respondents (4.6 per cent) spent three-quarters of their day taking and transcribing shorthand; 30 (19.8 per cent) spent approximately one-half of their day taking and transcribing shorthand; 32 (21.1 per cent) spent one-quarter of their day; and 30 (19.8 per cent) spent less than one-quarter of their day taking and transcribing shorthand. The median fell in the one-quarter day range for those taking and transcribing shorthand.

TABLE IX

PORTION OF THE DAY EMPLOYEES SPENT TAKING
AND TRANSCRIBING SHORTHAND

	Number	Per cent
All day	4	2.5
Three-quarters day	7	4.6
One-half day	30	19.8
One-quarter day	32	21.1
Less than one-quarter day	30	19.8
Not listed	49	32.2
Total	152	100

Table X, page 27, illustrates the shorthand speed in words per minute, of employee respondents interviewed.

The distribution is as follows: 19 (12.4 per cent) were in the 110 words per minute and over category; 29 (19.1 per cent) were in the 110 to 100 category; 45 (29.9 per cent) were in the 100 to 80 category; 34 (22.3 per cent) were in the 80 and under range, and 25 (16.3 per cent) were not listed. The median fell in the 100 to 80 words per minute range.

TABLE X
SHORTHAND SPEED OF RESPONDENTS
IN WORDS PER MINUTE

	Number	Per cent
110 and over	19	12.4
110 to 100	29	19.1
100 to 80	45	29.9
80 and under	34	22.3
Not listed	25	16.3
Total	152	100

Table XI, page 28, indicates the frequency with which respondents indicated shorthand was a prerequisite for employment. Of the employee population interviewed, 96 (63.2 per cent) replied in the affirmative, with 47 (31 per cent) replying in the negative as to whether shorthand was a prerequisite for employment. Eight respondents (5.2 per cent) were not listed. According to Table VII, 25 (67.8 per cent) of the employers interviewed used face-to-face dictation, and Table XI indicates that 63.2 per cent of the

employees interviewed were required to have shorthand for their present employment. The correlation between the requirement for employment and the use of shorthand on the job would appear to be significant.

TABLE XI

SHORTHAND AS A REQUIREMENT FOR EMPLOYMENT

	Number	Per cent
Affirmative	96	63.2
Negative	47	31
Not specified	1	.6
Not listed	8	5.2
Total	152	100

The shorthand speed required of employees for their present employment is indicated on Table XII, page 29. Of the employees interviewed, 4 (2.6 per cent) were required to take shorthand at over 110 words per minute; 16 (10.5 per cent) were required to take shorthand at the 110 to 100 word per minute level; 47 (31 per cent) were required to have a speed of between 100 to 80 words per minute; 1 employee (.6 per cent) was required to have a speed of under 80 words per minute; and 16 (10.5 per cent) indicated that shorthand speed was not a factor determining their employment.

Where a particular shorthand speed was a prerequisite of employment, the median shorthand speed required for employment fell in the 100 to 80 words per minute range.

TABLE XII

SHORTHAND SPEED, IN WORDS PER MINUTE,
REQUIRED FOR EMPLOYMENT

	Number	Per cent
110 and over	4	2.6
110 to 100	16	10.5
100 to 80	47	31
80 and under	1	.6
Not specified	16	10.5
Not listed	68	44.8
Total	152	100

Table XIII, page 30, indicates the number of employees who were not presently using shorthand who were required to use it at their last place of employment, and the portion of the day that they used it. The distribution is as follows: 3 employees (6.5 per cent) were in the all day category; 4 (8.6 per cent) were in the three-quarters day category; 1 (2.2 per cent) in the one-half day category; and 1 (2.2 per cent) in the less than one-quarter of the day category. Respondents not listed totaled 37 (80.5 per cent). The total* figure for this table is 46, or the number of employees who did not use shorthand at their present employment, shown on Table VII.

TABLE XIII

EMPLOYEES NOT USING SHORTHAND IN THEIR
PRESENT EMPLOYMENT WHO WERE REQUIRED
TO USE IT AT THEIR LAST PLACE OF
EMPLOYMENT

	Number	Per cent
All day	3	6.5
Three-quarters day	4	8.6
One-half day	1	2.2
One-quarter day		
Less than one-quarter day	1	2.2
Not listed	37	80.5
Total* (See preceding page)	46	100

Table XIV shows the distribution of employees required to transcribe from dictation machines. Of the employees interviewed, 70 (46 per cent) indicated that they were required to transcribe from dictation machines at their place of employment; 9 (6.9 per cent) wished to qualify this use as only occasional. Employees not required to use dictation machines totaled 82 (54 per cent) of the employee population.

TABLE XIV

EMPLOYEES REQUIRED TO TRANSCRIBE FROM DICTATION MACHINES

	Number	Per cent
Affirmative	70	46
Negative	82	54
Total	152	100

Table XV illustrates the portion of the day the employee population interviewed spent in using dictation machines as follows: 7 (4.6 per cent) spent all day transcribing from dictation machines; 6 (3.9 per cent) spent three-quarters of the day; 15 (9.9 per cent) spent one-half day; 14 (9.2 per cent) spent one-quarter day; 27 (17.8 per cent) spent less than one-quarter day; 82 (54 per cent) were not required to transcribe from dictation machines; 1 (.6 per cent) was not listed.

TABLE XV

PORTION OF THE DAY EMPLOYEES SPENT USING DICTATION MACHINES

	Number	Per Cent
All day	7	4.6
Three-quarters day	6	3.9
One-half day	15	9.9
One-quarter day	14	9.2
Less than one-quarter day	27	17.8
None	82	54
Not listed	1	.6
Total	152	100

Table XVI, page 32, depicts the distribution of opinions of the employee respondents, as to whether machine dictation is decreasing the need for shorthand. Eighty-nine employees (58.6 per cent) expressed the opinion that machine dictation is decreasing the need for shorthand skill, although

34 of this 89 (22.3 per cent) of the total respondents, indicated that in their opinion the need for shorthand skill is decreasing but is not being eliminated. The opinion that the need for shorthand skill is not decreasing was expressed by 46 employee respondents (30.3 per cent); 13 (8.6 per cent) did not wish to express an opinion, and 4 (2.5 per cent) were not listed.

TABLE XVI

EMPLOYEE OPINION AS TO WHETHER MACHINE DICTATION
IS DECREASING THE NEED FOR SHORTHAND

	Number	Per cent
Affirmative	89	58.6
Negative	46	30.3
No opinion	13	8.6
Not listed	4	2.5
Total	152	100

CHAPTER V

SUMMARY, CONCLUSIONS, LIMITATIONS, IMPLICATIONS AND RECOMMENDATIONS

The preceding research was undertaken for the purpose of determining the extent of use made of shorthand in selected industries in the Edmonton area, and as a means of answering the following questions:

1. What is the extent of use of shorthand in selected industries?
2. What proportion of the stenographer's day is spent in taking shorthand and transcribing notes?
3. What is the level of skill of shorthand when it is used?
4. What proportion of the stenographer's day is spent transcribing machine dictation?

A total of 167 industries in the Edmonton area were selected as the population to be interviewed; from these industries 159 employers and 152 employees were actually interviewed.

Summary

In summation, Tables I through XVI, in Chapter IV interpret the data accululated by this study. Table I establishes that of a total of 159 employers, 101 employer respondents (63.5 per cent) had machine dictation equipment in their establishment; 58 respondents (36.5 per cent) did not.

Employers using machine dictation according to Table II totaled 49 (31 per cent); 110 employers (69 per cent) did not use machine dictation. Of the employers that used machine dictation, 7 (4.4 per cent) wished to qualify their use as only occasional. In comparing Table I and Table II it is to be noted that 101 (63.5 per cent) of employers had machine dictation equipment--49 (31 per cent) used it. Since 49 employers that used machine dictation out of a total of 101 that had it available, it is established that 48.5 per cent of the employers that had machine dictation equipment actually used it.

Table III illustrating the number of employers dictating to a stenographer, shows that 101 employers (63.5 per cent) dictated to a stenographer; 58 (36.5 per cent) did not. Of the 101 employers, 18 (11.3 per cent) wished to qualify their dictation to a stenographer as only occasional.

Table IV shows the distribution of employer respondents preferring face-to-face dictation to a stenographer as follows: 76 employers (47.8 per cent) preferred face-to-face dictation; 46 (28.9 per cent) preferred machine dictation; 22 (13.8 per cent) had no preference; 4 (2.5 per cent) indicated that their preference depended upon the duties involved as to whether they preferred face-to-face dictation to a stenographer, or machine dictation.

Table V establishes that employers, as well as dictating to a stenographer or recording by means of machine dictation, write out in long-hand or type out communication to be reproduced by a stenographer: 115 employers (72.3 per cent) write out in long-hand, while 10 (6.3 per cent) type out such communication.

Table VI shows the distribution of employers preferring stenographers to have shorthand skill, rather than being capable at machine dictation, if all else were equal. One hundred ten employer respondents (69.2 per cent) indicated that they would prefer a stenographer with shorthand skill; 21 (13.2 per cent) did not prefer shorthand skill. Machine dictation skill preference was indicated by 9 respondents (5.7 per cent) while 11 employers (6.9 per cent) had no preference. Eight respondents (5.4 per cent) expressed the opinion that the duties involved would determine their preference.

Beginning with Table VII, employee responses are recorded, with Table VII showing the distribution of employee respondents interviewed who used shorthand. A total of 152 employee respondents were interviewed. Of this total, 103 employees used shorthand on the job (67.8 per cent); 46 employees (30.2 per cent) did not use shorthand. Seven respondents (4.6 per cent) of the 103 who used shorthand wished to specify that this use was only occasional. Three respondents (2 per cent) of the employee population were not listed.

Table VIII indicates the types of shorthand that employees used. Examination of this table establishes that 87 employee respondents (57.8 per cent) used Pitman shorthand; 38 (25 per cent) used Gregg; 13 (8.6 per cent) used Speed-writing and two employees interviewed (1.3 per cent) used other kinds of shorthand.

Table IX illustrates the extent to which shorthand was used by the employees interviewed. Four respondents (2.5 per cent) spent all day taking and transcribing shorthand notes; 7 respondents (4.6 per cent) spent three-quarters of their day taking and transcribing shorthand; 30 (19.8 per cent) spent approximately one-half of their day taking and transcribing shorthand; 32 (21.1 per cent) spent one-quarter of their day; and 30 (19.8 per cent) spent less than one-quarter of their day taking and transcribing shorthand. The median fell in the one-quarter day range for those taking and transcribing shorthand.

The shorthand speed in words per minute of employee respondents is indicated by Table X with the distribution as follows: 19 (12.4 per cent) were in the 110 words per minute and over category; 29 (19.1 per cent) were in the 110 to 100 category; 45 (29.9 per cent) were in the 100 to 80 category; 34 (22.3 per cent) were in the 80 and under range and 25 (16.3 per cent) were not listed. The median speed for taking shorthand in words per minute was in the

100 to 80 words per minute range.

The frequency with which respondents indicated shorthand was a prerequisite for employment is established on Table XI. Of the employee population interviewed, 96 (63.2 per cent) were required to have shorthand as a prerequisite for employment; shorthand was not a requirement for 47 (31 per cent). Eight respondents (5.2 per cent) were not listed.

Table XII illustrates the shorthand speed required of employees for their present employment as follows: 4 (2.6 per cent) were required to take shorthand at over 110 words per minute; 16 (10.5 per cent) were required to take shorthand at the 110 to 100 words per minute level; 47 (31 per cent) were required to have a speed of between 100 to 80 words per minute; 1 employee (.6 per cent) was required to have a speed of under 80 words per minute; and 16 (10.5 per cent) indicated that shorthand speed was not a factor in the determination of their employment. Where a particular shorthand speed was a prerequisite of employment, the median shorthand speed required for employment fell in the 100 to 80 words per minute range.

The frequency of employee respondents not required to use shorthand at their present employment, but who were required to do so at their previous place of employment is shown on Table XIII. The distribution is as follows: 3 (6.5 per cent) were in the all day category; 4 (8.6 per cent) were

in the three-quarters of a day category; 1 (2.2 per cent) was in the one-half day category; and 1 (2.2 per cent) was in the less than one-quarter of the day category. Respondents not listed as requiring shorthand at their last place of employment totaled 37 (80.5 per cent). The total figure for this table is 46, or the number of employees who did not use shorthand at their present place of employment, as indicated on Table VII.

The distribution of employees required to transcribe from dictation machines is illustrated on Table XIV, and is as follows: 70 (46 per cent) indicated that they were required to transcribe from dictation machines at their place of employment; 9 (6.9 per cent) wished to qualify this use as only occasional. Employees not required to use dictation machines totaled 82 (54 per cent) of the employee population.

Table XV illustrates the proportion of the employee respondents' time spent in using dictation machines as follows: 7 (4.6 per cent) spent all day transcribing from dictation machines; 6 (3.9 per cent) spent three-quarters of the day; 15 (9.9 per cent) spent one-half day; 14 (9.2 per cent) spent one-quarter day; 27 (17.8 per cent) spent less than one-quarter day; 82 (54 per cent) spent none of their day transcribing from dictation machines; 1 (.6 per cent) was not listed.

The distribution of opinions of the employee respondents as to whether machine dictation is decreasing the need for shorthand is depicted on Table XVI. Respondents that expressed the opinion that machine dictation is decreasing the need

for shorthand skill numbered 89 (58.6 per cent). However, 34 (22.3 per cent) of this 89 of the total respondents indicated that in their opinion the need for shorthand skill is decreasing but is not being eliminated. The opinion that the need for shorthand skill is not decreasing was expressed by 46 respondents (30.3 per cent); 13 (8.6 per cent) did not wish to express an opinion and 4 (2.5 per cent) were not listed.

Conclusions

In the province of Alberta there are a limited number of areas in which to do the type of study undertaken, and since one of the two largest cities in the province was selected for this research, it seems reasonable to consider that the number of industries studied has provided an adequate cross-section of this city at least. The two major cities in the province are reasonably comparable in so far as size, types of industries, and sizes of industries are concerned. Therefore for the purpose of this study, the generalization will be for the Edmonton area only and while the generalization would be highly probable for the other major city in the province, no attempt has been made to generalize beyond the Edmonton area.

1. Since Table XIV shows that nearly half (46 per cent) of the employees interviewed were required to transcribe from dictation machines at their place of employment, it is concluded that approximately one-half of the stenographers in

this area are required to transcribe from dictation machines.

2. Employees using machine dictation were recorded more frequently in the "less than one-quarter of the day" category than in any other, according to Table XV.

3. Ninety-six (63.2 per cent) of the stenographer respondents interviewed were required to have shorthand for their employment; it is concluded therefore that over 60 per cent of stenographers are required to have shorthand for employment.

4. Since nearly 70 per cent (67.8 per cent) of employee respondents use shorthand at their employment, according to Table VII, and since, as indicated on Table IX, the median proportion of a stenographer's time allocated to the taking and transcribing of shorthand fell in the one-quarter day range, it is to be concluded that nearly 70 per cent of stenographers in this area take shorthand at their place of employment, and that the proportion of their day spent taking and transcribing shorthand notes is approximately one-quarter of the day.

5. Where a particular shorthand speed was a prerequisite of employment, the median shorthand speed required for employment, as indicated on Table XII, was in the 100 to 80 words per minute range. It is concluded then that a speed of from 100 to 80 words per minute is required for taking shorthand as a prerequisite for employment.

6. The median speed for taking shorthand after employment, in words per minute, as illustrated in employee respondent's Table X, was in the 100 to 80 words per minute range. It is concluded that a speed of from 100 to 80 words per minute in taking shorthand is not only required as a prerequisite for employment, but that the same speed approximates that used in industry, since this range of speed appears to be maintained after employment.

7. Since 76 employers (47.8 per cent) indicated, according to Table IV, that they preferred face-to-face dictation to a stenographer, it is concluded that nearly half of the employers in the industries participating in this research prefer face-to-face dictation to a stenographer, rather than machine dictation.

8. One hundred ten employer respondents (69 per cent) recorded, on Table VI, their preference for a stenographer to have shorthand skill, rather than being equally capable just at machine dictation, if all else were equal. It is concluded then that nearly 70 per cent of employers prefer a stenographer to have shorthand skill, rather than just being capable at machine dictation.

9. The distribution of opinions of employee respondents as to whether machine dictation is decreasing the need for shorthand skill, in Table XVI, indicates that 89 (58.6 per cent) of the employee respondents expressed the opinion

that machine dictation is decreasing the need for shorthand skill. However, 34 (22.3 per cent) of this 89 indicated their belief that the need for shorthand skill is being decreased but not eliminated. Therefore in the opinion of the employee respondents, it is concluded that machine dictation is decreasing the need for shorthand skill, although this need is not being eliminated.

Limitations

No attempt was made to compare like industries in the two major cities in the province; manufacturing industries, for example could have been compared, with the resulting data adding more scope to the research undertaken, also adding the possibility that a wider generalization could have been made.

Tabulation and correlation of the frequency of respondents using shorthand as well as machine dictation was not undertaken. The frequency of use of one particular type of shorthand was not analyzed, although this may have been a factor of some importance concerning the use made of shorthand in the industries selected.

The possibility exists that bias may have been introduced into the study by having the employer choose the stenographer respondent to be interviewed. It is entirely possible that the employer may have been more apt to choose a top stenographer in his employee as representative of his staff, rather than a junior stenographer.

The response to this particular type of telephone interview was most gratifying. The reaction appeared to be more successful than a mailed opinionnaire with its subsequent follow-up letters. The interviews purposely were very brief, and the respondents did not seem to resent the intrusion on their time. However, if this method of interview were widely used, it is doubtful if it would be as consistently rewarding, since a part of the success may have been attributed to the novelty of the telephone interview as a research tool.

Implications and Recommendations

It is recommended that further research be undertaken especially to show the correlation between the use of shorthand and the speed at which the stenographer takes dictation.

Some comments from respondents, especially employers, seem to indicate that a stenographer with shorthand skill is preferred even though she may not be required to use this skill, since some employers seem to feel that the stenographer's demonstrated ability to master a difficult subject indicates that she is a more capable employee than one who does not have such ability. Employers expressed the opinion that there appears to be more status connected with having a stenographer in one's employ rather than having an individual equally capable at taking machine dictation. It

was suggested by several employers that it was much more costly to involve a stenographer as well as the supervisor who will dictate to her, than to have a supervisor dictate to a machine, and his stenographer transcribe at her convenience. Therefore, a matter of pride or prestige appears to be involved in retaining a stenographer to take dictation. These appear to be significant observations. However, since no attempt was made to investigate the reasons why employers prefer stenographers to have shorthand skill, it is recommended that research be undertaken in this area.

It is recommended that those preparing curricula consider that a majority of the industries interviewed requested that applicants continue to be trained in the skill of taking and transcribing shorthand as indicated by this study.

It is also recommended that the actual use of machine dictation, as is shown by this study, be considered in the preparation of curricula for business education, so that emphasis can be placed upon machine dictation training, as well as training in shorthand.

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APPENDIX A.

COPY

LIST OF FIRMS PARTICIPATING IN THE
INTERIM SALARY AND WAGE RATE SURVEY - 1967

Alberta Bureau of Statistics

NUMBER OF FIRMS BY INDUSTRIAL GROUPING

REPLYING IN THE

INTERIM SALARY AND WAGE RATE SURVEY

<u>INDUSTRY</u>	<u>NUMBER OF FIRMS REPLYING</u>	<u>SAMPLE SIZE</u>	<u>PERCENTAGE REPLYING</u>
1. Manufacturing	98	105	93%
2. Oil Firms	46	54	85%
3. Public Service	33	35	94%
4. Department Stores	13	14	93%
5. Wholesale Firms	41	42	98%
6. Automotive Firms	20	20	100%
7. Financial Firms	27	27	100%
8. Retail Firms	45	50	90%
9. Institutions	63	69	91%
10. Construction Firms	<u>28</u>	<u>35</u>	<u>80%</u>
TOTAL	<u>414</u>	<u>451</u>	92%

LIST OF FIRMS PARTICIPATING IN THE
INTERIM SALARY AND WAGE RATE SURVEY - 1967

MANUFACTURING FIRMS - CALGARY

Alberta Distillers Ltd.
Alberta Pacific Grain Ltd.
Alpha Jersey Dairy
Atco Industries Ltd.

Barber Machinery Ltd.
Burns & Co. Ltd.

Calgary Brewing and Malting Co. Ltd.
The Calgary Herald
Calgary Packers Ltd.
Calgary Power Ltd.
Canada Malting Co. Ltd.
Canadian Industries Ltd.
Canadian Pacific Railways
City Bakery
Cominco Ltd.
Consolidated Concrete Ltd.
Continental Can Co. of Canada Ltd.

Dominion Bridge Co. Ltd. (Calgary Emp.)
Domtar Packaging Ltd. (Hinds & Dauch Div.)

Engineered Building (Calgary) Ltd.

General Bakeries Ltd.

Hectors Ltd.
Honeyboy Bread (Calgary) Ltd.

Irving Industries Div. Ltd.

McCoy Renn Manufacturing Ltd.
McGavin Toastmaster Ltd.

Maple Leaf Purity Mills Ltd.
Molson's Western Breweries Ltd.

National System of Baking

Rileys Reproductions Ltd.
Robin Hood Flour Mills Ltd.

Sunbeam Bread Div. of Weston Bakeries Ltd.

Union Packing Co. Ltd.
United Dairies Ltd.
Universal Sales and Service

Western Gypsum Products Ltd.

MANUFACTURING FIRMS - EDMONTON

A I M Steel Ltd.
Alberta Bedding Ltd.
Alberta Concrete Products Co. Ltd.
Alberta Phoenix Tube and Pipe Ltd.

Barber Machinery Ltd.
Black Sivalis and Bryson Ltd.
Building Products Ltd.

Canada Cement Co. Ltd. (Clover Bar report)
Canada Iron Foundries Ltd.
Canada Packers Ltd.
Canadian Bedding Co. Ltd.
Canadian Industries Ltd. (Plastic Div.)
Capital City Box Co. Ltd.
Chemcell Ltd.
W. H. Clark Lumber Co. Ltd.
Coca Cola Ltd.
Commercial Printers Ltd.

Dominion Bridge Works (Edm. Emp.)
Domtar Chemicals Ltd.

The Edmonton Journal
Edmonton Produce Ltd.

Gainers Ltd.
Great West Garment Co. Ltd.

Inland Cement Industries Ltd.

Jasper Printing Ltd.

Lane-Wells (Canada) Ltd. (Edm. Emp.)

McGavin Toastmaster Ltd.

National System of Baking Ltd.
Northwest Industries Ltd.
Norwood Foundry

Palm Dairies Ltd.
Parker Sportswear Co. Ltd.
Polychemical Ind. Ltd.

Sherritt Gordon Mines Ltd.
The Steel Company of Canada Ltd.
J. P. Sunrise Bakers Ltd.
Swift Canadian Co. Ltd.
Syncrude Canada Ltd.

T.I.W. Western Ltd.

Weldwood of Canada Ltd.
Westeel Products Ltd.
Weston Bakeries Ltd. (Edm.)

W. R. Zeidlers (1962) Ltd.

MANUFACTURING FIRMS - OTHER LOCATIONS

Alberta Coal Ltd., WABAMUM
Automotive Electric Can. Ltd., LETHBRIDGE

Building Products of Canada Ltd., WABAMUM

Canada Packers Ltd., LETHBRIDGE
Central Alberta Dairy Pool., RED DEER
Chemcell Ltd., TWO HILLS

Dominion Glass Co. Ltd., REDCLIFF

Ellision Milling and Elevator Co. Ltd., LETHBRIDGE

Lethbridge Herald Co. Ltd., LETHBRIDGE

Prebuilt Mfg. Ltd., LETHBRIDGE

Medicine Hat Brick & Tile Co. Ltd., MEDICINE HAT

North Canadian Forest Industroes Ltd., GRANDE PRAIRIE
Northern Alberta Dairy Pool Ltd. (GRANDE PRAIRIE EMP.)
Northwest Nitro Chem. Ltd. MEDICINE HAT
Northwestern Pulp and Power, HINTON

Sicks Lethbridge Brewery Ltd., LETHBRIDGE
Steel Company of Canada Ltd., (CAMROSE WORKS) EDMONTON

Western Canadian Seed Processors Ltd., LETHBRIDGE

OIL FIRMS - CALGARY

Alberta Gas Trunk Line Co. Ltd.
Amerada Petroleum Corp and Subsidiaries
Atlantic Refining Co.

Banff Oil Ltd.
British American Oil Co. Ltd. (Refinery)

Canada Superior Oil Ltd.
Canadian Fina Oil Ltd.
Canadian Industrial Gas & Oil Ltd.
Canadian Pacific Oil & Gas Ltd.
Canadian Western Natural Gas Co. Ltd.
Cascade Drilling Co. Ltd.
Central Del Rio Oils Ltd.
The Chevron Standard Co.

Dome Petroleum Ltd.
Duke Drilling Co. (1965) Ltd.

OIL FIRMS - CALGARY (CON'T)

General Petroleum Drilling Co.
Geophysical Service Incorp.
Great Plains Div. Co. of Canada Ltd.
Gustavson Drilling 1964 Ltd.

Home Oil Co. Ltd.
Hudson's Bay Oil and Gas Co. Ltd. (Calgary Emp.)

Imperial Oil Producing Dept. Ltd.

Mobil Oil Canada Ltd.

Schlumberger of Canada
Shell Canada Ltd. (Calgary Emp.)
Sun Oil Company

Texaco Exploration Co.
Triad Oil Co. Ltd.

Union Oil Co. of Canada Ltd.

OIL FIRMS - EDMONTON

Alberta and Northwest Chamber of Mines and Resources

Big Horn Drilling Co.

Canadian Utilities Ltd.
~~Chevron Standard Co.~~ (Edm. Report)

Eldorado Mining and Refining Ltd.

Imperial Oil Ltd.
Imperial Oil Enterprises Ltd.
Interprovincial Pipe Line Co.

Mitchell and Associates Ltd.

Northwestern Utilities Ltd.

Pan American Petroleum Corp. (Edm. Emp.)

Shell Canada Ltd. (Edm. Emp.)

Texaco Exploration Co. (Edm. Emp.)

OIL FIRMS - OTHER LOCATIONS

Great-Canadian-Oil-Sands-Ltd. (Alta. Report) EDMONTON

Hudsons' Bay Oil and Gas (Alta. Report) CALGARY

PUBLIC SERVICE - CALGARY

Air Canada

Air Canada (Sales Division)

Calgary Public School Board

City of Calgary

Department of National Revenue (Taxation)

Government of the Province of Alberta

Oil and Gas Conservation Board

PUBLIC SERVICE - EDMONTON

Alberta Government Telephones

Alberta Liquor Control Board

Alberta School Trustees Association

Canada Manpower Centre

Canadian Broadcasting Corp. (Edmonton)

City of Edmonton

Civil Service Commission (Edmonton)

Department of National Defence, R.C.A.F.

Department of National Revenue, (Taxation)

Department of Public Works of Canada

Department of Transport

Department of Veterans Affairs

Government of the Province of Alberta.

Pacific Western Airlines

PUBLIC SERVICE - OTHER LOCATIONS

City of Camrose, CAMROSE

City of Drumheller, DRUMHELLER

City of Grande Prairie, GRANDE PRAIRIE

City of Lethbridge, LETHBRIDGE

City of Medicine Hat, MEDICINE HAT

City of Red Deer, RED DEER

County of Lacombe #14, LACOMBE

PUBLIC SERVICE - OTHER LOCATIONS

Government of Province of Alberta, GRANDE PRAIRIE
Government of the Province of Alberta, LETHBRIDGE
Government of the Province of Alberta, MEDICINE HAT
Government of the Province of Alberta, OTHER THAN ALREADY SPECIFIED
Government of the Province of Alberta, RED DEER

DEPARTMENT STORES - CALGARY

The T. Eaton Co. of Canada Ltd.

Hudsons' Bay Co.

Woodward Dept. Store
F. W. Woolworth Ltd.

Zellers Western Ltd.

DEPARTMENT STORES - EDMONTON

Army and Navy Department Stores Ltd.

The T. Eaton Co. of Canada Ltd.

Hudsons' Bay Co. Retail Stores

Hohnstone Walker Ltd.

Simpson's Sears Ltd.

Woodward Stores (EDM.) Ltd.

Zellers Western Ltd.

DEPARTMENT STORES - OTHER LOCATIONS

The T. Eaton Co. of Canada Ltd. (Leth. Emp.)

WHOLESALE FIRMS - CALGARY

Acme Novelty Co.
Alberta National Drug Co.
Alberta Poultry Producers Ltd.

Canadian General Electric Co.
Cardwell Mfg. Co. Ltd.

WHOLESALE FIRMS - CALGARY (CON'T)

Electrical Contractors and Machines Co. Ltd.
Ferguson Supply Alberta Ltd.
General Motor Products of Canada Ltd.
Honeywell Controls Ltd.
Huttons Ltd.
I.H. Co. of Canada Ltd.
John Deere Ltd.
Macdonalds Consolidated Ltd.
Marshall Wells Limited
Massey Ferguson Limited
Payless War Surplus Stores Ltd.
Prairie Pacific Distributors Western Limited (Calg. Emp.)
United Farmers of Alberta Co-op
Western Co-operative Ltd., Fertilizers
Western Grocers Ltd.

WHOLESALE FIRMS - EDMONTON

Alberta Poultry Marketers Co-op Ltd.
The J.H. Ashdown Hardware Co. Ltd.
Canadian General Electric Co.
Canadian Westinghouse Co. Ltd.
Dom. Fruit Ltd.
Federated Co-op Ltd.
Ford Motor Co. of Canada Ltd.
General Motors Products of Canada Ltd. (Edm. Emp.)
International Harvester Co. of Canada Ltd.
Macdonalds Consolidated Ltd.
Marshall Wells of Canada Ltd.
Prairie Pacific Distributors Western Ltd.
Provincial News Co. Ltd.
Walter Woods Ltd.
Western Grocers Ltd.
Western Rock Bit Co. Ltd.
Western Supplies Ltd.

WHOLESALE FIRMS -- OTHER LOCATIONS

Canadian Dressed Meats (Lethbridge) Ltd., LETHBRIDGE
Cockshutt Farm Equipment Ltd. (Alta. Branches), BRANTFORD, ONT.

Maple Leaf Mills Ltd., MEDICINE HAT
Medicine Hat Greenhouses (Med. Hat. Emp.), CALGARY

AUTOMOTIVE FIRMS -- CALGARY

Alberta White Truck(s) (Calgary) Ltd.

Calgary Motor Products Ltd.

Freeman Wilson Ltd.

Renfrew Chrysler Plymouth Ltd.

Stampede Pontiac Buick Ltd.

S. J. Thompson Truck Equipment

H. M. Trimble and Sons Ltd.

AUTOMOTIVE FIRMS -- EDMONTON

Edmonton Motors Ltd.

Healy Motors Ltd.

Jenner Motors Ltd.

Loveseth Ltd.

Miller Motor Co. Ltd.

Turnbull Motors Ltd.

Waterloo Motors Ltd.

AUTOMOTIVE FIRMS -- OTHER LOCATIONS

Beny Chevrolet Oldsmobile Ltd., LETHBRIDGE
Beny Motors, MEDICINE HAT

Chrysler Corporation of Canada Ltd., RED DEER

Enerson Motors (1954) Ltd., LETHBRIDGE

Park Bros. Ltd., GRANDE PRAIRIE

Red Deer Motors (Canada) Ltd., RED DEER

FINANCIAL FIRMS - CALGARY

Bank of Montreal

Bank of Nova Scotia (Calg. Report)

The Canadian Imperial Bank of Commerce (Calgary Emp.)

Canadian Permanent Mortgage Corp.

Crown Trust Co.

Federated Investments Ltd.

Fenerty, Fenerty, McGillivray, Robertson, Prowse, Brennan & Fraser

Macleod, Dixon, Burns, Love, Lerrich, and Lomas

Montreal Trust Co.

The Royal Bank of Canada (Calgary Emp.)

Royal Insurance Co. Ltd.

Royal Trust Co.

FINANCIAL FIRMS - EDMONTON

Bank of Montreal (Edm. Report)

Bank of Nova Scotia (Edm. Report)

Canada Permanent Companies

Canadian Imperial Bank of Canada (Edm. Emp.)

Clement Parlee & Co.

First Investors Corp. Ltd.

Medical Services (Alberta) Incorporated

Milner Steer Dyde Massie Layton Cregas & MacDonnell

Nash & Nash

The Royal Trust Co.

Wawanesa Mutual Ins. Co.

Weber Bros. Agencies Ltd.

FINANCIAL FIRMS - OTHER LOCATIONS

Bank of Montreal (Red Deer Report), CALGARY

The Canadian Imperial Bank of Commerce (Lethbridge Emp.), TORONTO 1

Traders Finance Corp. Ltd. (Red Deer), TORONTO 5

RETAIL FIRMS - CALGARY

Alberta Wheat Pool

Betty Shop Ltd.

Calgary Exhibition and Stampede Ltd.

Calgary Inn Ltd.

Canada Safeway Ltd.

Caravan Motor Hotel

Dominion Stores Ltd.

Floor Maintenance Ltd.

Highlander Motor Hotel Co. Ltd.

Holt Renfrew & Co. Ltd.

Hotel York

Industrial And Road Equipment Ltd.

International Business Machines Co. Ltd.

Palliser Hotel

Premier Ontario Launderers & Dry Cleaners

The Tea Kettle Inn Ltd.

United Grain Growers Ltd.

Western Canadian Greyhound Lines

RETAIL FIRMS - EDMONTON

R. Angus (Alberta) Ltd.

Beaver Lumber Co. Ltd. (Edmonton)

Canada Safeway Ltd.

Canadian National Express

Canadian National Institute for the Blind (Edmonton)

Canadian National Telegraphs

Fabric Care Association Ltd.

Fairview Shopping Centres Ltd.

Gateway Hotel

I.B.M. Co. Ltd. (Edm.)

Imperial Lumber

Industrial and Road Equipment Ltd. (Edmonton Emp.)

RETAIL FIRMS - EDMONTON (CON'T)

King Edward Hotel of Edmonton Ltd.

The MacDonald Hotel

Mayfair Hotel Ltd.

Muttart Builders Supplies (Edmonton) Ltd.

National Cash Register Co. of Canada Ltd.

Olivetti Underwood Ltd.

Page the Cleaner and Furrier Ltd.

Park Hotel Ltd.

Sunwapta Broadcasting Ltd.

Swanson Lumber Co. Ltd.

Union Tractor & Equipment Co. Ltd.

Western Canadian Greyhound Lines (Edmonton Emp.)

RETAIL FIRMS - OTHER LOCATIONS

Burroughs Business Machine of Canada Ltd., DON MILLS

El Rancho Motor Hotel Ltd., LETHBRIDGE

Lethbridge Laundry and Dry Cleaners, LETHBRIDGE

INSTITUTIONS - CALGARY

Alberta Childrens Hospital

Dr. E. F. Allison

Baker Memorial Sanitorium

Calgary Auxiliary Hospital & Nursing Home District #7

Calgary General Hospital

Calgary Public Library

Col. Belcher Hospital

Foothills Hospital

Holy Cross Hospital

Mount Royal Junior College

Rockyview General Hospital

Salvation Army Grace Hospital

University of Alberta .

INSTITUTIONS - EDMONTON

Aberhart Memorial Sanitorium
Associate Dental Group of the Medical Dental Building

Canadian Manufactures Association
Charles Camsell Indian Hospital

Department of Computing Science

Edmonton General Hospital
Edmonton Public Library

Glenrose Provincial General Hospital
Good Samaritan Auxiliary Hospital

Links Associated Clinic

Drs. R. S. Margolis, & B. G. Kendrachuk

Misericordia Hospital

Provincial Mental Institute (Oliver)

Research Council of Alberta
Royal Alexandra Hospital

St. Joseph's Auxiliary Hospital

University of Alberta
University Hospital

Weinlos Clinic
Workmens Compensation Rehabilitation Clinic

INSTITUTIONS - OTHER LOCATIONS

Alberta Hospital, CLARESHOLM
Alberta Hospital, (Raymond Report), CLARESHOLM
Archer Memorial Hospital

Bethany Auxiliary, RED DEER
Drumheller General Hospital, DRUMHELLER

Fort Saskatchewan General Hospital, FORT SASKATCHEWAN

Grande Prairie Municipal Hospital, GRANDE PRAIRIE

High River Municipal Hospital, HIGH RIVER

Leduc Auxiliary Hospital, WETASKIWIN
Lethbridge Auxiliary Hospital, LETHBRIDGE
Lethbridge Municipal Hospital, LETHBRIDGE

INSTITUTIONS - OTHER LOCATIONS (CON'T)

Dr. D. McCharles Hospital, MEDICINE HAT

Medicine Hat General Hospital, MEDICINE HAT

Mountain View-Kneehill Auxiliary Hospital, DIDSBURY

The Parsons Clinic, RED DEER

Peace River Municipal Hospital No. 21, PEACE RIVER

Providence Hospital, HIGH PRAIRIE

Provincial Mental Hospital, PONOKA

Provincial Training School (P.T.S.) RED DEER

Red Deer General Hospital, RED DEER

Rosehaven Hospital, CAMROSE

St. Catherine's Hospital, LAC LA BICHE

St. Joseph's General Hospital, VEGREVILLE

St. Joseph's Hospital, BARRHEAD

St. Michael's General Hospital, LETHBRIDGE

St. Therese Hospital, ST. PAUL

St. Vincents' Hospital, PINCHER CREEK

Wetaskiwin Municipal Hospital, WETASKIWIN

Youville Nursing Home, ST. ALBERT

CONSTRUCTION FIRMS - CALGARY

Ace Construction Co. Ltd.

Bennett & White (Alberta 1963) Ltd.

Bird Construction Co. Ltd. (Calgary)

Burns and Dutton Concrete and Const. Co. Ltd.

Commonwealth Construction

Con-Force Products Limited

J. H. Cook and Associates (Architects and Engineers)

Foundation Co. of Canada Ltd.

Mannix Co. Ltd.

Poole Construction Co. Ltd.

Quality Construction Ltd.

Stevenson, Raines, Barrett, Hutton, Seton & Partners

Strong, Lamb & Nelson Ltd.

CONSTRUCTION FIRMS--EDMONTON

Aaby Construction and Transport Co. Ltd.
Atlas Construction Co. Ltd.

Banister Construction (1963) Ltd.

J. K. Campbell & Assoc. Ltd.
Canadian Comstock Co. Ltd.
A. V. Carlson Construction Ltd.
Christensen & MacDonald Construction Ltd.
Claremond Project Consultants Ltd.

Hume and Rumble Ltd.

McNamara Construction Western Ltd.

Tottrup & Associates Limited

Burns and Dutton Construction (1962) Ltd., FORT MCMURRAY

Canadian Bechtel Ltd., TAR ISLAND

Kenwood Eng. Construction Ltd., LETHBRIDGE

Oland Construction Co. Ltd. (Lethbridge) CALGARY

APPENDIX B.

OPINIONNAIRE
(Employer)

1. Do you have machine dictation equipment in your establishment?
Yes (1); No (2).
2. Do you use machine dictation?
Yes (1); No (2); Yes, but only occasionally (3).
3. Do you dictate to a stenographer?
Yes (1); No (2); Yes, but only occasionally (3).
4. Which do you prefer?
Face-to-face dictation (1); Machine dictation (2);
No preference (3); Each type of dictation has its
own place (4).
5. Do you type out, or write in long-hand, any communication
given to a stenographer, to be reproduced by typewriter
or other means?
Yes (1); No (2).
6. If "Yes", Type out in rough draft (1); Write out in long-
hand, a rough draft (2).
7. In your opinion is the need for shorthand skill decreasing
with the adoption of dictation equipment?
Yes (1); No (2); To some extent (3); No opinion (4).
8. If you were to hire a stenographer would you prefer her
to have shorthand if another individual were available,
equally capable at machine dictation, with all else
being equal?
Yes (1); No (2); No preference (3); It would depend on
the duties involved (4); Prefer machine dictation (5).

Comments _____

OPINIONNAIRE
(Employee)

1. Do you use shorthand at your place of employment?
Yes (1); No (2); Yes, but only occasionally (3).
2. What kind of shorthand do you use?
Pitman (1); Gregg (2); Speedwriting (3); Forkner (4);
Other (5).
3. If "Yes", what portion of your day is spent taking and
transcribing notes?
All day (1); three-quarters day (2); one-half day (3);
one-quarter day (4); less than one-quarter day (5).
4. What is your present shorthand speed?
Over 110 (1); 110-100 (2); 100-80 (3); less than 80 (4);
not specified (5).
5. Was shorthand a requirement of your present employment?
Yes (1); No (2); not specified (3).
6. If "Yes", what speed was required for employment?
Over 110 (1); 110-100 (2); 100-80 (3); less than 80 (4);
not specified (5).
7. If you are not presently using shorthand, did you use it
at your last place of employment?
All day (1); three-quarters day (2); one-half day (3);
one-quarter day (4); less than one-quarter day (5).
8. Are you required to transcribe from a dictation machine?
Yes (1); No (2); Yes, but only occasionally (3).
9. If "Yes", what portion of your working day is spent
transcribing from a machine?
All day (1); three-quarters day (2); one-half day (3);
one-quarter day (4); less than one-quarter day (5).
10. In your opinion is machine dictation decreasing the need
for shorthand?
Yes (1); No (2); No opinion (3); Yes, it is decreasing,
but not eliminating the need for shorthand (4).

Comments: _____



May 5, 1969.

Mrs. Joyce Piepgrass,
R.R. #1,
ONAWAY, Alberta.

Dear Mrs. Piepgrass:

The three staff members of the Department of Industrial and Vocational Education who have been reviewing your proposal opinionaire have agreed that, subject to the changes indicated, it is acceptable for use in your study.

We have given primary attention to the problem of ambiguity and to the difficulties which may occur due to the manner in which you have sequenced your questions. We believe that the corrections indicated have changed the phrasing well enough to reduce ambiguity to a minimum, and in-person interviews with three employers and three employees to make a rough check on the sequencing.

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